

Additions to the Orchid Flora of Tropical America

With Illustrations of *Pleurothallis* and Observations
on Noteworthy Species

BY
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IN the following pages new species of tropical American orchids receive attention. The genera are arranged in alphabetical sequence.

Basiphyllaea corallicola (*Small*) *Ames comb. nov.*

Carteria corallicola *Small* in *Torrey* 10 (1910) 188.

As the generic name *Carteria* is valid for a genus of the Algae I have referred *Carteria corallicola* to *Basiphyllaea*, a genus proposed by Schlechter (in *Fedde Repert.* 17 (1921) 76) for the reception of a Cuban species formerly placed in *Tetramiera*.

Cranichis Viereckii *Ames sp. nov.* Radices carnosae, villosae. Caules abbreviati, diphylli, foliis valde inaequalibus, ad basim approximatis. Folia petiolata, ovata vel elliptica, basi rotundata, apice acuta. Scapus elongatus, superne albido-glandulosus, bracteatus, bracteis arcte appressis. Racemus plus minusve cylindraceus, dense vel subaxe multiflorus. Bractee inflorescentiae bene laneeolatae, acuminatae, acutae, glabrae, uninerviae. Sepala lateralialia elliptico-lanceolata, acuta, membranacea, glabra, per medium conspicue uninervia. Sepalum dorsale simile. Petala lineari-oblonga, obtusa, margine longe villosa, villis

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valde flexibilibus, albidis. Labellum late ovatum, acuminatum, subacutum, valde concavum, longitudinaliter trinervium nervis lateralibus e latere nervigeris, glabrum. Columna generis.

Terrestrial herb, 13-30 cm. tall to the summit of the raceme. Roots coarsely fibrous, fleshy, villous. Stems much abbreviated, concealed by scarious tubular sheaths. Leaves two, basilar, very dissimilar in size, petiolate, with the petioles 1-3 cm. long, slender; smaller leaf-blade 1.5-4 cm. long, 7-16 mm. wide, narrowly ovate-lanceolate, acuminate, acute; larger leaf-blade 6.5-8 cm. long, 3.5-4.5 cm. wide, ovate or elliptical, acuminate, acute, membranaceous, reticulate-nerved. Scape slender or rather stout, including the raceme up to 28.5 cm. long, with about six closely appressed acute tubular bracts below the inflorescence, shortly glandular-pubescent above. Raceme 3-4.5 cm. long, about 2 cm. in diameter, cylindrical, many-flowered, with the rachis smooth. Bracts of the inflorescence 5-7 mm. long, lanceolate, acute, smooth. Ovary smooth. Lateral sepals about 4 mm. long, 1.5 mm. wide, elliptic-lanceolate, acute, conspicuously 1-nerved through the middle, with an indistinct shorter nerve on each side, smooth. Dorsal sepal 4 mm. long, 1.75 mm. wide, elliptic-lanceolate, acute. Petals 4 mm. long, about .5 mm. wide, linear-oblong, obtuse, somewhat curved at the base, mid-nerve conspicuous, margin provided with numerous elongated flattish whitish hairs which are often 1.5-2 mm. long. Labellum 2.5 mm. long, broadly ovate, narrowed above the middle into a subacute tip, concave, smooth, heavily and conspicuously 3-nerved, with each lateral nerve giving off at right angles four to five supplementary nerves. Column about 1 mm. long. Capsules sessile, 9 mm. long.

Allied to *Cranichis atrata* Schltr., from which it differs conspicuously in the foliage, in the elongated hairs on the margin of the linear rather than narrowly elliptical petals, and in having quite a different labellum.

COLOMBIA, Vista Nieve, Santa Marta, *H. L. Viereck* s. n., December 18, 1922. (TYPE in Herb. Ames No. 27181. DUPLICATE TYPE in U. S. Nat. Herb. No. 1185519.)

Epidendrum bilobatum Ames sp. nov. Rhizoma validum, radicans, repens. Caules inter se distantes, oblique erecti, juniores vaginis laxis vestiti. Folia disticha, ligulata, apice obscure bilobata. Inflorescentia terminalis, pauciflora. Bractee inflorescentiae conduplicatae, explanatae ovatae. Flores flavescentes. Sepala inaequaliter elliptica, concava, extus prope medium valde carinata, carina prope apicem sepalorum denticulata. Sepalum dorsale anguste ellipticum, acutum, concavum, nervis prominentibus integris. Petala late spathulata. Labellum valde cochleatum, basi cordatum, apice profunde bilobatum. Discus nervis plus minusve prominentibus, nervo medio infra apicem columnae inerassato. Columna brevis labello adnata.

Rhizome stout, creeping, with coarse whitish roots. Stems 20–30 cm. long to the base of the terminal peduncle, 4–4.5 cm. apart on the rhizome, erect, about 4 mm. in diameter near the base, terete below, somewhat complanate above, leafy. Leaves 11–12.5 cm. long, 1.4–2 cm. wide, ligulate, bilobed at the obtuse tip, jointed to elongated sheaths, distichous. Peduncle with the raceme about 1 dm. long, few-flowered. Rachis of the raceme 8 cm. long, somewhat zigzag. Bracts of the raceme 1.5–1.9 cm. long, distichous, 1–2.5 cm. apart, rigid, conduplicate, ovate when spread out. Pedicel with the ovary somewhat rugose. Lateral sepals about 12 mm. long, elliptical, acute, strongly concave, deeply keeled on the outer surface near the middle, the keel denticulate near the apex. Dorsal sepal about 1.4 cm. long, hardly 6 mm. wide, narrowly elliptical, acute, prominently nerved. Petals 11 mm. long, 4 mm. wide above the middle, broadly spatulate, obtuse, prominently nerved. Labellum including the adnate column 1.5 cm. long, 1.5 cm. wide, deeply concave, cochleate, deeply bilobed in front, strongly cordate at the base. Nerves of the disc prominent, the middle one thickened near the base beneath the column. Column 7 mm. long, stout, dilated upward.

A close ally of *Epidendrum coriifolium* Lindl., from which it is easily separable by means of its very dissimilar labellum. In the distant flowers similar to *E. santacolarens* Ames.

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COSTA RICA, Cachi, C. H. Lankester 509, August 5, 1923. Flowers pale apple green (yellowish). 4000 feet altitude. (TYPE in Herb. Ames No. 27247.)

Epidendrum chinense (Lindl.) Ames comb. nov.

Broughtonia chinensis Lindl. in Hook. Lond. Journ. 1 (1842) 492.

Epidendrum nonchincense Reichb. f. in Walp. Ann. 6 (1862) 324.

Laeliopsis chinensis Lindl. ex Reichb. f. in Saunders Refug. Bot. 2 (1882) sub. t. 139, in synon.

A Central American species which was originally ascribed to China by error. Although it is unfortunate that a species of the American flora should have been given a misleading name, it is not permissible to adopt the change proposed by Reichenbach.

GUATEMALA to SAN SALVADOR.

Epidendrum circinatum Ames sp. nov. Rhizoma validum. Caules abbreviati, inter se distantes, basi teretes, superne complanati, di- vel trifoliati, juniores vaginis amplis vestiti. Folia ligulata vel elliptico-oblonga, valde coriacea, apice bilobata, oblique ascendunt. Pedunculus terminalis, e spatha oriens, paene usque ad basim florifer. Racemus plus minusve decemflorus, rigidus, bracteis magnis flores subtendentibus. Pedicellus cum ovario bracteam subtendentem vix excedens. Sepala lateralia oblongo-ovata, valde circinata, acuta, subtus prope apicem breviter carinata, carina inaequaliter denticulata. Sepalum dorsale simile, apice ecarinatum. Petala oblonga, circinata, subobtusata, sepalis angustiora. Labellum permagnum, basi cordatum, obovatum, apice leviter emarginatum. Discus per medium carina angustata nunc sulcata ornatus. Columna basi labelli adhaerens, utrinque in callum producta, callis disco labelli adhaerentibus.

Rhizome about 8 mm. in diameter, rooting. Stems about 9 cm. long, 1.5–2 cm. apart, terete at the base, compressed above, when immature concealed by ample loosely appressed sheaths, 2–3-leaved. Leaves approximate, jointed,

14–20 cm. long, 3–4 cm. wide, oblong or elliptic-oblong, coriaceous, bilobed at the rounded apex, obliquely ascending. Inflorescence terminal, up to 13-flowered. Peduncle with the raceme 23 cm. long, complanate, winged by the decurrent keels of the bracts, subtended at base by a conspicuous conduplicate spathe. Bracts of the raceme about 2–2.5 cm. long, strongly conduplicate, obliquely ascending, distichous, carinate along the middle with the keels decurrent on the rachis. Pedicel with the ovary up to 2.5 cm. long, stout, hardly exceeding the floral bracts. Lateral sepals circinate, 1.4–1.5 cm. long, about 9 mm. wide, ovate-oblong, acute, with a short keel beneath at the tip, nerves somewhat prominent. Dorsal sepal 1.5 cm. long, about 7 mm. wide, oblong-lanceolate, carinate beneath at the acute tip. Petals 1.4 cm. long, about 4 mm. wide, circinate, oblong, subobtus, more membranaceous than the sepals. Labellum 3.1 cm. long to the base of the adherent column, 1.7–2 cm. wide above the middle, free portion 2–2.5 cm. long, obovate, emarginate, with a central keel which is sometimes grooved along the upper surface. Column stout, about 1 cm. long, produced on each side in front into a conical callus which is adherent to the disc of the labellum.

Epidendrum circinatum is closely allied to *E. palmense* Ames and *E. coriifolium* Lindl., but is clearly separable from them by the strongly revolute or circinate sepals and petals, and by the very different labellum.

COSTA RICA, Peralta, C. H. *Lankester* 477, July 13, 1923. Recurved sepals and petals dull yellowish green. Labellum pale yellowish green. Column green. 1000 feet altitude. (TYPE in Herb. Ames No. 27205.)

***Epidendrum glandulosum* Ames sp. nov.** Rhizoma gracile, longe repens, radicans. Radices ramosae, glabrae. Caules anguste fusiformes, juniores vaginati, monophylli. Folium lineare, obtusum, inflorescentia multo longius. Pedunculus cum racemo terminalis, pauciflorus. Ovarium glandulosum. Sepala lateralia a basi lata inaequaliter oblongo-lanceolata, valde acuminata, extus praecipue in nervis prominentibus sparse et breviter glandulosa. Sepalum dor-

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sale lanceolatum, acuminatum, acutissimum, trinervium nervis prominentibus, extus sparse glandulosum. Petala lineari-lanceolata, leviter falcata, utrinque attenuata, acuta, trinervia. Labellum columnae adnatum, simplex; lamina transverse elliptica parte terminali triangulari, acuta. Discus per medium nervis incrassatis approximatis instructus. Columna carnosae, apice edenticulata.

Rhizome creeping, rooting, elongated, slender, 1–2 mm. in thickness. Stems 2.5–4 cm. long, slenderly fusiform, 8–11 mm. apart on the rhizome, 2–3 mm. in diameter when dry, clothed (when immature) with several loosely appressed sheathing bracts, the uppermost one leaf-like, monophyllous or subdiphyllous. Leaf 6–8 cm. long, 2–2.5 mm. wide, linear, obtuse, margin more or less revolute in dried specimens. Peduncle terminal, including the raceme about 2 cm. long, few-flowered. Raceme about 1 cm. long, loosely flowered. Pedicel with the ovary about 3 mm. long, densely glandular, with the glands abbreviated and rufous. Floral bracts shorter than the ovary, linear-lanceolate. Lateral sepals 5.5 mm. long, about 2 mm. wide, asymmetrically lanceolate or lightly falcate, acuminate, acute, prominently nerved, sparsely and shortly glandular on the outer surface, especially on the nerves. Dorsal sepal about 6 mm. long, 1.25 mm. wide, lanceolate, acuminate, acute, sparsely glandular on the outer surface. Petals 5 mm. long, .5–.75 mm. wide, linear-lanceolate, lightly falcate, acute, 3-nerved. Labellum with the base adnate to the column, 5 mm. long; lamina 3.5 mm. long, about 3 mm. wide, somewhat concave, lower two-thirds transversely elliptic, upper third narrowly triangular and acute. Disc prominently 3-nerved along the middle with the nerves approximate. Column hardly 3 mm. long, stout, with the fleshy clinandrium entire.

Epidendrum glandulosum is without close allies in the Central American flora. It suggests the Cuban *E. vestitum* Ames, but it differs from that species in the normally monophyllous stems, glandular ovary and sepals, and in the absence of calli at the base of the labellum. [Plate 20: 1, lip and column $\times 5$. 2, dorsal sepal $\times 3\frac{1}{2}$. 3, flower $\times 3\frac{1}{2}$. 4, petal $\times 4$. 5, lateral sepal $\times 3\frac{1}{2}$.]

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PANAMA, On trail from Colon, C. W. Powell 338, 1923. Sepals and petals olive green, labellum white. Flowering in September. Sea level. (TYPE in Herb. Ames No. 27041.)

Epidendrum lacustre Lindl. Fol. Orch. Epidendrum (1853) 50; Reihb. f. in Walp. Ann. 6 (1862) 369.

Epidendrum leucochilum Lindl. Orch. Linden. (1846) 8, non Klotzsch.

A specimen collected by Maxon in Nienaragua appears to represent this rare species which was originally discovered in Venezuela by Linden. Unless there are subtle differences between them which are evanescent in dried material, I do not doubt that the Venezuelan and Nienaraguan plants are identical. Lindley's type consists simply of the inflorescence and the spathaceous bracts which subtend it, but the structure of the flowers is well exhibited in the dried specimen, and the outline of the labellum is clear in a sketch prepared by Lindley for an herbarium record. *Epidendrum lacustre* has not been reported heretofore as a native of Central America. The extension of range represented by Maxon's Nienaraguan specimens is highly interesting, as the species up to the present time was known only from Venezuela, and is not one of those common species which range widely through the American tropics. That it should not have been reported from the country intervening between Nienaragua and Venezuela is probably the result of insufficient exploration rather than a peculiarity of distribution.

NICARAGUA, Mombacho Volcano, W. R. Maxon, Alfred D. Harvey & A. T. Valentine 7807, July 5, 1923. 3 meters up on branch of forest tree. Stems ascending, 60 cm. long. Flowers white. 750-900 meters altitude.

Epidendrum linifolium Ames sp. nov. Radices ramosissimae, valde fibratae, patentes, glabrae. Rhizoma gracile, radicans, vaginis scariosis arete appressis instructum. Caules elongati, graciles, verisimiliter decumbentes. Folia disticha, inter se satis distantia, linearia, in sicco subulata, oblique ascendunt. Inflorescentia terminalis. Rachis pe-

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dunculi leviter fractiflexa, plus minusve septemflora. Bracteae racemi infundibuliformes, acutae. Pedicellus cum ovario bracteis longior. Sepala oblongo-lanceolata, acuta, apicibus incrassata. Petala linearia, plus minusve incrassata. Labellum trilobatum; lobis lateralibus rotundatis; lobo medio lineari. Discus lamella denticulata ornatus. Columna brevis, lamellae disci adhaerens.

Rhizome very slender, copiously rooted. Roots very much branched, finely fibrous, spreading, elongated, whitish, smooth. Stems 9–15 cm. long, probably decumbent, less than 1 mm. in diameter, flexuous. Leaves six to eight, distichous, 1.5–3 cm. long, hardly .5 mm. wide when dry, subulate, acute, 9–14 mm. apart, obliquely ascending. Inflorescence terminal. Peduncle with the raceme 3.5–5 cm. long, slender. Rachis of the raceme slightly zigzag, bearing about seven small flowers. Bracts of the raceme 2.5–3.5 mm. long, infundibuliform below the middle, narrowed above into a triangular acute tip. Pedicel with the ovary longer than the subtending bract. Lateral sepals 4.25 mm. long, 1.5 mm. wide, sharply reflexed, lanceolate, acute, carinate-thickened near the tip, convex. Dorsal sepal 4 mm. long, 1.5 mm. wide, oblong-lanceolate, acute, carinate-thickened beneath the tip. Petals 3.5–4 mm. long, .5 mm. wide, linear, subacute, triquetrously thickened from about the middle to the apex, spreading or obliquely porrect. Labellum about 4 mm. long, adherent to the column, 3-lobed, fleshy, about 3 mm. wide across the lateral lobes; lateral lobes 1.5 mm. long, rounded in front, ascending, together forming an orbicular lamina; middle lobe 2 mm. long, .5 mm. wide near the base, porrect, linear, gradually narrowed to the subacute tip, semiteretc. Disc of the labellum smooth, but with a conspicuous horizontally placed plate at the base which is adherent to the column, and denticulate or crenulate in front. Column stout, 1.25 mm. long.

A close ally of *Epidendrum paranthicum* Reichb. f., from which it differs in having larger flowers and a very different lamella on the disc beneath the apex of the column. From *E. musicolum* Schltr., — a species which I have not seen and know only from the description, — it differs in having nar-

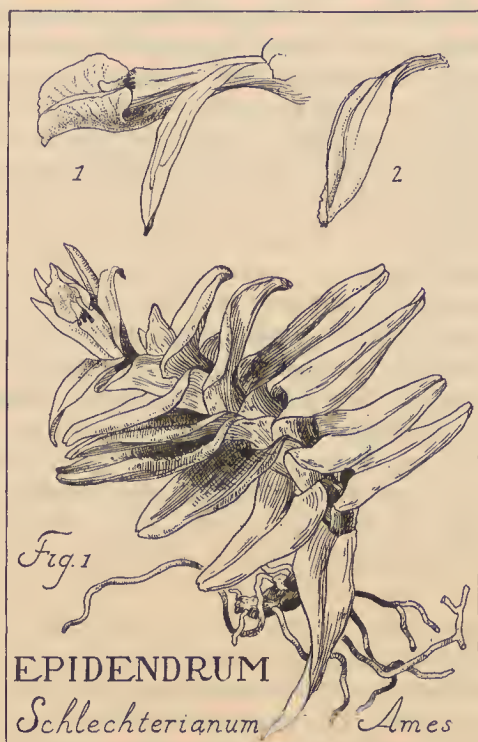
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rower leaves and a very dissimilar callus at the base of the labellum. [Plate 20: 1, lip and column $\times 5\frac{3}{4}$. 2, flower $\times 4$. 3, petal $\times 3\frac{3}{4}$. 4, dorsal sepal $\times 4\frac{1}{2}$. 5, lateral sepal $\times 4\frac{1}{2}$.]

COSTA RICA, La Palma, *H. E. Stork* 417, July 8, 1923.
On old stump in pasture. (TYPE in Herb. Ames No. 27168.)

***Epidendrum Schlechterianum* Ames nom. nov.**

Epidendrum brevicaule Sehltr. in Fedde Repert. Beihefte 17 (1922) 30, non Sehltr. in Fedde Repert. Beihefte 9 (1921) 81.



In his review of the flora of Peru, Schlechter proposed a new species under the name *Epidendrum brevicaule*. Later he used this name again for a species collected by C. W. Powell

in Panama. As the more recently described species cannot bear the name under which it was published, a new name is necessary. [Fig. 1.]

PANAMA, Hills east of the city, C. W. Powell 18, November 1915. Flowers greenish purple. 1200 feet altitude: San Juan, Powell 3465, November 1923. Epiphyte. Sea level.

Epidendrum Storkii Ames sp. nov. Habitus *Epidendri difformis* sed in labello differt. Radices fibratae, glabrae. Caules approximati, erecti, leviter flexuosi, complanati. Folia usque ad octo, disticha, oblongo-elliptica, valde coriacea, apice inaequaliter bilobata, vaginis foliorum caulem obtegentibus. Flores terminales, duo ad quattuor, longipedicellati. Sepala patentia, lateralibus oblanceolatis, acutis. Sepalum dorsale lateralibus subsimile. Petala lineari-spathulata. Labellum columnae adnatum, basi cordatum, antice trilobatum; lobis lateralibus rotundatis; lobo medio triangulari, acuto. Discus prope apicem columnae breviter bicarinatus. Columna usque ad apicem dilatata, clinandrio fimbriato.

Roots coarsely fibrous, whitish, smooth, spreading. Stems erect, 12–17.5 cm. long, complanate, concealed by the sheaths of the leaves. Leaves distichous, 2–5.5 cm. long, 7–18 mm. wide, oblong-elliptic, unequally bilobed at the obtuse apex, obliquely ascending, coriaceous. Sheaths of the leaves 2–3 cm. long, complanate, dilated upward. Inflorescence terminal, subumbellate, subtended by a leaf-like spathe. Flowers greenish, two to four. Pedicel with the ovary about 3.5 cm. long, slender, ascending. Lateral sepals 2.2 cm. long, 4 mm. wide above the middle, oblanceolate, acute or subobtuse, thickened at the tip, prominently 5-nerved. Dorsal sepal 2–2.2 cm. long, up to 5 mm. wide above the middle, acute or subobtuse, thickened at the tip. Petals 2.1 cm. long, 2–3 mm. wide above the middle, slenderly spatulate, subacute, prominently several-nerved. Labellum adnate to the column, 2 cm. long, free portion 1.3 cm. long including the auricles of the cordate base, 1.4 cm. wide, 3-lobed in front; lateral lobes rounded, entire; middle lobe 3.5 mm. long, 3.25 mm. wide at the base, much exceeding

the lateral lobes, quadrate below the middle, narrowed toward the apex into an acute thickened tip. Disc shortly bicarinate near the apex of the adherent column, with the keels 2 mm. long and strongly flattened laterally; between the keels the central nerve of the disc is much thickened, and as a fleshy ridge extends to the base of the middle lobe. Column 1.3 cm. long, dilated upward, with the clinandrium finely fimbriate.

Epidendrum Storkii is allied to *E. difforme* Jacq., from which it differs in the outline of the labellum. In the structure of the labellum it shows close affinity to *E. pudicum* Ames and *E. simulacrum* Ames, but is clearly distinguished from them by the much larger flowers.

COSTA RICA, Mountains south of Cartago, *H. E. Stork* 460, June 20, 1923. (TYPE in Herb. Ames No. 27294): Vicinity of La Palma, on the road to La Hondura, W. R. Maxon & Alfred D. Harvey 8116, July 17-18, 1923. Flower greenish. On mossy tree trunk. 1500-1700 meters altitude.

Maxillaria Lankesteri Ames *sp. nov.* Herba epiphytica. Caules elongati, pseudobulbis inter se satis distantibus instructi. Folia elliptico-oblonga, apice bilobata. Pars caulis florifera bracteis arete imbricantibus obteeta. Pedunculus uniflorus, bibracteatus. Sepala lateralia oblongo-lanceolata, acuta, quinquenervia. Sepalum dorsale simile. Petala oblongo-lanceolata, obtusa, quadrinervia. Labellum trilobatum; lobis lateralibus minutis, semiovatis; lobo medio elliptico, emarginato, margine valde deflexo, prope basim callo transverso instructo. Columna areolata, in pedem producta.

Epiphytic herb with slender ascending or drooping stems which bear slender pseudobulbs at intervals and are invested between the pseudobulbs with closely imbricating bracts from among which the flowers are produced. Stems, — with a few distichous leaves at the growing point, — slender, about 3 mm. thick, arising from a mass of whitish fibrous roots, concealed at base by the persistent sheaths of fallen leaves, sometimes subtended by the remains of pseudobulbs. Pseudobulbs 2.5-3 cm. long, 3-4 mm. thick, monophyllous

at the summit, with a subtending leaf on a sheathing base, 6-8 cm. apart, produced in succession as the stems elongate. Above each newly formed pseudobulb the stem is concealed by the closely appressed bracts from among which the flowers are produced. Leaves of the pseudobulbs 2-4.5 cm. long, about 1 cm. wide, elliptic-oblong, obtuse, bilobed at the tip, with an apicule between the lobes, the lamina of the subtending leaf equaling or exceeding the pseudobulb, the immature leaves of the growing tip of the stem smaller and distichous, crowded. Peduncle 1-flowered, 7 mm. long, slender, the upper bract subtending the pedicel. Bracts about 8 mm. long, conduplicate, shortly tubular at the base, ovate-lanceolate, prominently nerved. Pedicel 7 mm. long, almost concealed by the subtending bract. Lateral sepals 11 mm. long, up to 4 mm. wide, oblong-lanceolate, acute, 5-nerved, forming a distinct mentum with the foot of the column. Dorsal sepal 12 mm. long, about 3 mm. wide below the middle, oblong-lanceolate, acute, somewhat carinate at the tip on the outer surface. Petals 11 mm. long, 3 mm. wide, oblong-lanceolate, obtuse, 4-nerved (the fourth nerve sometimes indistinct). Labellum 9.5 mm. long, 3-lobed; lateral lobes minute, about 2 mm. long, semiovate, subacute, obliquely erect, porrect; middle lobe 8 mm. long, about 4.5 mm. wide when spread out, strongly convex, with the margin deflexed or almost revolute, sulcate along the middle, 5-nerved, with a heavy callus at the base in front of the lateral lobes. Column slender, arched, produced into a conspicuous foot.

From the material which constitutes the type, it is evident that after a pseudobulb is formed the stem grows on, and from among imbricating bracts produces a number of flowers borne singly on short peduncles. After the flowering season the growing tip of the stem, which always bears several distichous leaves, elongates, and at length gives rise to a new pseudobulb, when the vegetative history of the plant repeats itself.

Allied to *Maxillaria microphyton* Schltr., but with broader leaves, larger flowers, and a different labellum. *Ornithidium parvulum* Schltr. is also closely allied. *O. par-*

vulum appears to be the same as *Maxillaria microphyton*, and from the original description it is quite impossible to find substantial differentiating characters between them. Both of the species were collected by Tonduz under the same field number (9670), and it is probable that Sehleehter described the same species twice under different genera, and that his *Ornithidium parvulum* is a synonym of *Maxillaria microphyton*.

COSTA RICA, Caehi, C. H. *Lankester* 508, 1923. Sepals and petals hyaline, striped with maroon. Column pale green. (TYPE in Herb. Ames No. 27219.)

***Oncidium floridanum* Ames sp. nov.**

Oncidium sphacelatum Ames Contrib. Orch. Fl. So. Fla. (1904) 22 (exclude t.), non Lindl.

Herba terrestris, caulibus foliatis pseudobulbo bifoliato terminatis. Folia sub pseudobulbo pauca, plana, coriacea. Pseudobulbi elongati, valde complanati, ancipites, in siceo eanalieulati. Folia ligulata, acuta. Pedunculus elongatus, laxe ramosus vel subsimplex. Bractee inflorescentiae squamiformes, pedicello multo breviores. Sepala lateralialibera, elliptico-oblonga, subtus prope apicem valde sed breviter carinata. Sepalum dorsale simile, subtus inconspicue carinatum. Petala ovato-lanceolata, subtus prope apicem breviter earinata, margine plus minusve undulata. Labellum toto ambitu panduriforme; lobi laterales parvi, rotundati; lobus intermedius transverse oblongus vel obscure reniformis, leviter emarginatus. Crista in basi disci septemdentata, dentibus basilaribus lobulatis. Columna prope apicem utrinque alata.

Terrestrial herb. Roots coarsely fibrous, whitish, spreading. Pseudobulbs congested, subtended by several elongated leaves which are sheathing at the base, 8-12 cm. long, about 2 cm. thick in greatest diameter, strongly flattened, ancipitous, bifoliate at the apex. Leaves ligulate, 4 dm. or more long, 1.5-2 cm. wide, acute, coriaceous in texture. Peduncle stout, about 6 dm. long, terminating in a compound raceme, or rarely in a simple raceme. Bracts of the peduncle below the inflorescence closely appressed,

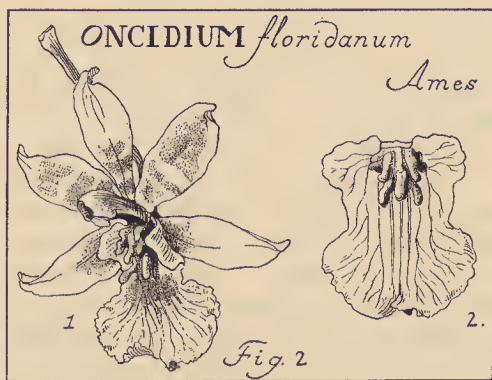
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tubular; bracts of the raceme scale-like, about 5 mm. long, much shorter than the pedicels. Pedicel with the ovary 1.5-2.5 cm. long. Flowers yellowish, with brownish stains and markings. Lateral sepals about 1 cm. long, 4 mm. wide, elliptic-oblong, free at the base, obtuse, shortly and prominently carinate beneath near the apex. Dorsal sepal about 1 cm. long, weakly carinate near the tip, otherwise similar to the lateral sepals. Petals about 1 cm. long, 4.5-5 mm. wide, ovate-lanceolate, acute, slightly reflexed at the tip, shortly carinate beneath, undulate on the margin. Labellum about 11 mm. long, broadly pandurate, with the basal lobes much reduced, rounded, more or less spreading, and with the terminal lobe 9 mm. wide and 6 mm. long, transversely oblong or somewhat reniform in outline, emarginate; isthmus between the basal and terminal lobes 2 mm. long, 6.5 mm. wide. Crest at the base of the disc conspicuous, 7-dentate or -lobed, with the anterior pair of teeth obliquely spreading, complanate, obtuse, the basal pair lobulate, the middle pair complanate, obtuse, with a fleshy more or less porrect tooth interposed. Column 5 mm. long, stout, with a conspicuous wing on each side near the summit.

Oncidium floridanum is closely related to *O. Baueri* Lindl. and *O. sphacelatum* Lindl., from both of which it differs most conspicuously in the lobing of the crest at the base of the lip.

The history of this species is rather interesting. The original specimens were collected by A. A. Eaton on November 13, 1903, near Brown's Homestead, in Dade County, Florida. The plants were in fruit, with a few withered flowers still adhering to the branches of the compound raceme. From this very unsatisfactory material I confused the species with *Oncidium sphacelatum* Lindl. In May 1904, Eaton collected the species again, this time near Black Point Creek, and in March 1905, he discovered another station at Cool Bay, east of Whitewater Bay, in Monroe County (no. 1372). Several of the plants flowered in my greenhouse, from which specimens were sent to R. A. Rolfe for confirmation of the belief that the species was undescribed.

Mr. Rolfe was unable to identify the specimens and suggested that proposals regarding them be delayed until the Reichenbachian Herbarium should be unsealed. He feared that some of the ambiguous species described by Reichenbach might be conspecific with the Floridian species. In the preparation of an enumeration of the orchids of the United States and Canada it has been necessary to take up again the identity of the species. As I have been unable to ascribe it to any described species, I have proposed for it the name given above. [Fig. 2, $\times 2$.]



FLORIDA, Black Point Creek, A. A. Eaton 957, May 22, 1904. Edge pine woods in damp, rocky soil. (TYPE in Herb. Ames No. 5375.)

Pelexia callosa Ames sp. nov. Radices fasciculatae, carnosae, breviter villosae. Caulis valde abbreviatus, vagina scariosa abbreviata ampla laxe appressa obtectus. Folia duo, longe petiolata, petiolis oblique ascendentibus sulcatis utrinque alatis; lamina folii anguste vel late ovata, basi rotundata, apice acuminata, acuta, membranacea, in vivo atroviridis. Scapus erectus, folia aequans vel foliis subbrevior, superne pubescens, paucibracteatus, bracteis arete appressis acutis. Racemus elongatus, subluxus, multiflorus. Bracteae inflorescentiae anguste lanceolatae, acutae, margine sparse pubescenti. Flores oblique ascendentes.

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Sepala lateralibus extus glanduloso-pubescentia, mentum elongatum saecatum formantia, basi cohaerentia, lanceolata. Sepalum dorsale erectum eum petalis in galeam elongatam eonnatum, extus glanduloso-pubescens. Petala inaequaliter spathulata, margine anteriore sparse glanduloso-pubescentia infra medium. Labellum elongatum, columnae adhaerens, explanatum subpanduriforme, basi sagittatum, supra medium valde dilatatum, prope apicem valde constrictum, rotundatum, obtusum. Discus glanduloso-pubescens, callo forcipato ornatus. Columna elongata; rostellum in membranam oblongo-linearem productum.

Roots fasciculate, fleshy, 4–8 cm. long, up to 7 mm. in diameter, villous. Stem abbreviated, entirely concealed by an ample scarious loosely appressed sheath which is about 1.5 cm. long. Leaves two. Petioles 15–16 cm. long, slender, obliquely ascending, sulcate, winged on each side; lamina of the leaf 13–18 cm. long, 6–8 cm. wide, narrowly to broadly ovate, acuminate, acute, dark green above with a distinct mid-nerve. Scape excluding the raceme 20 cm. long, with about six lanceolate closely appressed bracts, pubescent above. Raceme about 12 cm. long, 3–4 cm. in diameter, loosely many-flowered. Rachis glandular-pubescent. Pedicels obliquely ascending, with the ovary about 1 cm. long, subtended by linear-lanceolate ascending bracts. Lateral sepals including the mentum 2.4 cm. long, about 3 mm. wide above the middle, glandular-pubescent on the outer surface, above the base narrowly oblong, upper half lanceolate, acute. Mentum glandular-pubescent, the free portion 4 mm. long, obtuse. Dorsal sepal 1.7–1.8 cm. long, 4.5 mm. wide, somewhat spatulate, obtuse, adherent to the petals and with them forming a slender hood. Petals up to 1.8 cm. long, about 3 mm. wide above the middle, spatulate from a slender base, obtuse, sparsely glandular on the anterior margin below the middle. Labellum adnate to the column, 2.1–2.2 cm. long, 6 mm. wide above the middle, when detached and spread out narrowly panduriform from a sagittate base, dilated above the middle, strongly constricted 3 mm. below the rounded obtuse apical lamina, scurfy on the outer surface, pubescent within below the middle. Auricles

of the sagittate base extending into the mentum and concealed within it, thickened, dorso-ventrally flattened, 2 mm. long. Disc of the labellum glandular, with a forcipate glandulose thickening at the opening to the throat of the sac. Column about 1.1 cm. long, slender; rostellum linear.

Closely allied to *Pelexia hondurensis* Ames, from which it differs in having larger flowers, much less pronounced glandulosity in the throat of the labellum, and longer auricles at the flat not geniculate base of the labellum.

SPANISH HONDURAS, Dakota (Jilamo Arriba), Ames II. 259, March 21, 1923. Terrestrial in dense herbaceous undergrowth in forest. (TYPE in Herb. Ames No. 27280.)

Pleurothallis aperta (Kränzl.) Ames comb. nov.

Masdevallia aperta Kränzl. in Fedde Repert. 17 (1921) 430.

Pleurothallis hamata Rolfe in Orch. Rev. 24 (1916) 187, nomen; Ames Sched. Orch. 3 (1923) 8.

Pleurothallis Hunteriana Schltr. in Fedde Repert. Beihefte 17 (1922) 20.

This species was collected for the first time by Endres in Costa Rica, where it was found along the Rio Paquita above the San Marcos bridge. Until 1921 Endres' material lay in the Reichenbachian Herbarium at Vienna as an unidentified species. In 1921, Kränzlin described it under the name *Masdevallia aperta*. Unfortunately, in his description, Dr. Kränzlin misinterpreted the floral structure. He mistook the outer half of each deeply keeled lateral sepal for a keel and described the inner surface as carinate, ("Die 3 Sepalen haben die Kiele nicht aussen, sondern innen,"). In December 1922, Schlechter, working on material submitted to him by C. W. Powell, described a new species of *Pleurothallis* as *P. Hunteriana*. The Powell specimens are inseparable from *Masdevallia aperta*. In January 1923, before Schlechter's description of his new species reached me, I supplied a description for the *Pleurothallis hamata* of Rolfe, a species which was found by C. H. Lankester in Costa Rica, and successfully cultivated in the Royal Gardens at Kew.

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After an examination of the type specimens of the species proposed by Rolfe, Kränzlin and Schlechter, it became very evident that they belonged to a single species.

The flowers of *Pleurothallis aperta* are somewhat variable, but the chief discrepancies between descriptions are accounted for by the readiness with which the lateral sepals become free almost to the base, and in the petals being either 2- or 3-nerved.

I am unable to agree with Dr. Kränzlin's treatment of the generic position of this species. Its affinities are surely with *Pleurothallis*, not with *Masdevallia*. [Fig. 3.]



COSTA RICA, C. H. Lankester 350. Flowering in Hort. Bot. Reg. Kew, July 3, 1916. (TYPE of *Pleurothallis hamata* Rolfe.): Rio Paquita above the San Marcos bridge, Endres, November–December. Flowers yellow striped with purple. (TYPE of *Masdevallia aperta* Kränzlin.)

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PANAMA, Province of Chiriqui, C. W. *Powell* 277. Flowering in February 1923. Flowers orange with longitudinal rows of brown dots. 4500 feet altitude: *Powell* 245, October. Flowers yellow with brown dots in stripes. 4000 feet altitude. (TYPE of *Pleurothallis Hunteriana* Schltr.): *Powell* 109, July 6, 1919. Spotted with rosy brown in longitudinal lines. (Specimen in Herb. Hort. Bot. Reg. Kew.)

Pleurothallis Brighamii S. Wats. in Proc. Am. Acad. 23 (1888) 285; Ames Sched. Orch. 2 (1923) 18.

This species has remained obscure since it was published by Watson in 1888. Recent explorations indicate that it is widely distributed in Central America and fairly common. In Honduras I have found it in large, dense masses on the limbs of trees. Although common, it is not often found in flower. A single plant will sometimes bear one or two flowers while all others will be sterile. From our present knowledge of its distribution, it ranges from Guatemala to Panama.

The specimens from Panama differ slightly in the size of the labellum from Guatemalan and Honduran specimens, but structurally they are so similar to them that even attempts at varietal distinction seem superfluous. From field notes, the flowers of specimens from Panama appear to be different from the type in the markings of the sepals, but variation in color is hardly reliable as a guide for differentiation. [Plate 7.]

SPANISH HONDURAS, near Tela (Jilamo Arriba), Ames II. 245, March 21, 1923. 200 feet altitude: Guaimas, Ames II. 147, March 9, 1923. Growing on a woody vine. Sepals yellow with purple-brown stripes. 400 feet altitude: near Tela (Lancetilla Farm), along the Tela River on trees overhanging the water, Ames II. 205, March 16, 1923. 300 feet altitude.

PANAMA, Frijoles, banks of Gatun Lake, C. W. *Powell* 275: foothills east of Panama, *Powell* 274.

Pleurothallis divexa *Ames nom. nov.*

Pleurothallis dichotoma Ames Sched. Orch. 6 (1923) 58, non Schltr. in Fedde Repert. Beihefte 9 (1921) 140. [Plate 5.]

Pleurothallis hondurensis *Ames sp. nov.* Rhizoma repens. Caules secundarii approximati vel inter se distantes, elongati, ascendentes, paucivaginati, monophylli. Folium valde coriaceum, anguste lanceolatum, utrinque attenuatum, apice acutum, pedunculis fasciculatis multo longius. Pedunculi fasciculati ex axilla folii orientes, plus minusve octoflori. Bracteae inflorescentiae hyalinae, infundibuliformes. Sepala lateralía in laminam lanceolatam valde concavam cohaerentia, apice laminae divisa. Sepalum dorsale lineari-oblongum, conspicue elongatum, trinervium. Petala oblonga, acuta, supra medium plus minusve dilatata, margine paucidentata, apice valde acuta, late purpureo-striata per medium. Labellum carnosum, utrinque prope basim unguis lobulatum, supra unguem valde truncatum, in laminam oblongam acutam trinerviam expansum, nervis subtus prominentibus. Columna elongata, apice obscure fimbriata.

Roots coarsely fibrous, whitish, spreading. Rhizome elongated. Secondary stems 5–12 cm. long, 1–1.5 mm. thick, partly concealed by several tubular sheaths, the uppermost one very much elongated. Leaf coriaceous, 7.5–10 cm. or more long, 1.3–1.5 cm. wide above the middle, narrowly lanceolate, acute, longer than the racemes. Peduncles fasciculate in the axil of the leaf, enclosed at the base by a closely appressed sheath, with the raceme 4–5 cm. long, rather stout, bearing about eight fleshy flowers. Bracts of the raceme 1.5–2 mm. long, scarious, infundibuliform, acute. Pedicel with the ovary about 3 mm. long. Lateral sepals yellowish striped with purple, 9 mm. long, coherent almost to the apex, forming a lanceolate 6-nerved lamina; nerves prominent on the outer surface, the central one of each sepal produced at the tip into a distinct keel. Dorsal sepal 1 cm. long, 1 mm. wide near the middle, oblong, acute, 3-nerved, with the nerves purplish and prominent. Petals 3 mm. long,

hardly 1 mm. wide, oblong, somewhat dilated above the middle, with the margin inconspicuously paucidentate, acute, with a broad median band of rose-purple. Labellum yellowish, 5 mm. long, 2 mm. wide near the middle, unguiculate, with a small retrorse lobule on each side of the base of the claw; above the claw expanded into an oblong acute lamina which is truncate at the base; lamina fleshy, conspicuously 3-nerved, with the nerves prominent on the under surface. Column 2.5 mm. long, produced into a conspicuous foot.

Pleurothallis hondurensis is apparently a heliophyte, and when exposed to strong sunlight the leaves become suffused with a bronzy purple hue. The flowers vary in coloration, but are normally yellowish, with distinct purplish stripes along the veins of the sepals. The petals are more or less hyaline, with a broad central band of carmine or rose-purple. Although this species was found in several localities it was uncommon.

In habit *P. hondurensis* suggests *P. polystachya* A. Rich. & Gal. *Pleurothallis verecunda* Schltr. is also closely allied, being very similar in habit, but different in the lateral sepals being less coherent and in the fleshier labellum being conspicuously denticulate on each side at base in front of the claw. [Plate 15.]

SPANISH HONDURAS, Lancetilla Farm near Tela, *Ames II.* 204, March 16, 1923. On trees along the Tela River. 350 feet altitude. (TYPE in Herb. Ames No. 27250.); *Ames II.* 180, March 11, 1923. On tree overhanging rocky bed of Tela River. 300 feet altitude: Cordillera de Mico Quemada near Progreso, on trees overhanging the Rio Pelo, *Ames II.* 233, March 19, 1923. Flowers yellowish with purple stripes. 450 feet altitude: Truxillo, Copete Farm, *Ames II.* 197, March 14, 1923. On branch of small tree in sun, leaves bronzy; *Ames II.* 200, March 14, 1923. Flowers yellow with purple stripe. 150 feet altitude.

Pleurothallis periodica *Ames sp. nov.* Rhizoma valde abbreviatum. Caules secundarii dense caespitosi, valde abbreviati, monophylli, vaginis nervosis obtecti. Folium an-

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guste oblanceolatum, satis coriaceum, in petiolum sulcatum contractum, apice obscure bilobatum apiculo interjecto. Pedunculus elongatus folium superans, gracilis. Pedicelli fasciculati, bracteis nervosis imbricantibus subtenti. Flores periodici, succedanei, eodem tempore singuli aperti. Sepala lateralialia usque ad medium cohaerentia, in laminam ovatam bifidam leviter concavam extus bicarinatam expansa. Sepalum dorsale oblongo-lanceolatum, acutum, apice leviter incrassatum, extus per medium carinatum, trinervium. Petala dolabriformia vel subrhomboidea, apice valde incrassata et teretia, extus minute glandulosa, binervia. Labellum breviter unguiculatum, oblongum, apice rotundatum, margine obscure denticulatum, supra dense et breviter glandulosum praecipue per medium disci, utrinque prope marginem leviter carinatum carinis glanduloso-fimbriatis. Columna usque ad apicem leviter dilatata, apice trilobulata, lobo posteriore breviter eroso.

Rhizome abbreviated. Roots whitish, fibrous, spreading. Secondary stems caespitose, about 4 mm. long, concealed by closely appressed tubular sheaths which soon break down into spreading fibres, monophyllous. Leaf with the sulcate petiole 2.5–3.5 cm. long, 3.5–5 mm. wide, oblanceolate, with the apex minutely bilobed and apiculate. Peduncle 4–5.5 cm. long, with a closely appressed tubular bract near the middle, terminated by several closely imbricating nervose bracts which subtend the fasciculate pedicels of the successional flowers. Pedicels up to ten or more, up to 5 mm. long, slender, persistent. Ovary about 1 mm. long. Lateral sepals 8 mm. long, 3-nerved, cohering to about the middle, forming a bifid ovate lamina which is about 3 mm. wide at the middle; free portion of each sepal triangular, acute, 4 mm. long, lightly carinate on the outer surface along the middle. Dorsal sepal 7.5 mm. long, about 2 mm. wide near the middle, oblong-lanceolate, acute, 3-nerved, with the central nerve prominent and shortly decurrent on the ovary. Petals 3.5 mm. long, 1.5 mm. wide near the middle, dolabriform or subrhomboidal in outline, the anterior margin protuberant, apex terete, outer surface minutely glandulose. Labellum about 4 mm. long, 1.25 mm.

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wide, shortly unguiculate, oblong, rounded at the tip, 3-nerved, with the nerves prominent beneath, margin sparsely serrate-dentate, upper surface densely and minutely glandulose especially along the middle of the disc, with the glands near the centre in well-defined transverse rows. Disc lightly bicarinate, with the keels intramarginal and shortly denticulate. Column hardly 4 mm. long, produced at base into a short foot, apex trilobulate, with the posterior lobule obscurely erose-denticulate.

Pleurothallis periodica is closely allied to *P. Brighamii* S. Wats., from which it differs in the more glandulose denticulate labellum with shortly denticulate carinae and in the absence of an angular marginal projection on each side near the base. [Plate 4.]

COSTA RICA, Peralta, C. H. Lankester 463, July 13, 1923. Flowers hyaline, yellowish, deeply tinged and striped with maroon purple. Labellum and petals very dark maroon. (TYPE in Herb. Ames No. 27021.)

***Pleurothallis pompalis* Ames sp. nov.** Radices fibratae, albae, glabrae. Rhizoma valde abbreviatum. Caules secundarii caespitiosi, elongati, paucivaginati, monophylli. Vaginae nervosae, tubulatae. Folium oblanceolatum, in petiolum sulcatum contractum, apice bilobulatum apiculo interjecto. Pedunculus gracilis, cum racemo folium multo superans. Racemus laxis, verisimiliter secundus, plus minusve decemflorus. Braectae racemi infundibuliformes, aetae. Pedicellus cum ovario gracilis. Sepala lateralalia paene usque ad apicem cohaerentia, laminam anguste lanceolatam purpureo-villosam formantia, atropurpurea. Sepalum dorsale lineari-lanceolatum, acutum, intus dense purpureo-villosum, extus per medium alte carinatum. Petala late ovata, aeta, antice prope basim protuberantia. Labellum trilobatum, anguste unguiculatum; lobo medio oblongo, obtuso, margine deflexo; lobis lateralibus abbreviatis, antice in lobulum attenuatum contractis. Columna usque ad apicem dilatata.

Roots fibrous, whitish, smooth. Rhizome abbreviated. Secondary stems crowded, erect or ascending, 5-7 cm. long,

about 2 mm. in diameter, slender, rigid, partly concealed by tubular sheaths, monophyllous. Sheaths three; the uppermost one 2.7-3.4 cm. long, slightly dilated upward, nervose, brownish; the lowermost one abbreviated and soon breaking down into spreading fibres. Leaf 11-12 cm. long, up to 1.5 cm. wide, oblanceolate, contracted into a slender petiole, bilobulate at the tip with a short apiculate projection between the lobules. Peduncle solitary, including the raceme up to 3 dm. long, closely appressed to the petiole, with a short spathaceous braet at the base, below the raceme provided with several closely appressed tubular bracts. Raceme about 15 cm. long, bearing from ten to fifteen dull maroon secund flowers. Bracts of the raceme about 5 mm. long, tubular, acute. Pedicellate ovary 4-8 mm. long, ascending or at length deflexed. Lateral sepals 14 mm. long, coherent almost to the apex, forming a narrowly lanceolate lamina which is minutely and densely glandular in the middle and densely hairy on each side on the upper surface and conspicuously bicarinate beneath. Dorsal sepal about 14 mm. long, 3 mm. wide near the middle, narrowly lanceolate, acute, sparsely hairy near the margin on the upper surface, strongly carinate along the middle on the outer surface with the keel extending to the apex. Petals 2 mm. long, 1.5 mm. wide below the middle, broadly asymmetrically ovate, acute, produced anteriorly at base into a triangular protuberance which is decurrent along the foot of the column, 1-nerved. Labellum 5 mm. long, about 2 mm. wide, unguiculate, 3-lobed in front of the narrow claw; lateral lobes abbreviated, about 1 mm. long, produced anteriorly into a small obtuse porrect lobule; middle lobe 4 mm. long, oblong, obtuse, 3-nerved, with the nerves prominent beneath near the base. Disc tricarinate; median keel about 2 mm. long, much thickened, sulcate on the top and forcipate in front; lateral keels membranaceous, 2 mm. long, inclined, with the inner margins contiguous or overlapping each other in front. Column 3.5 mm. long, dilated upward, with a conspicuous wing on each side at the summit, the wings finely denticulate on the upper margin.

A close ally of *P. Wereklei* Schltr. and *P. vinaeae* Ames, from both of which species it differs conspicuously in the structure of the labellum and in the more robust habit of the plant. [*Plate 4.*]

COSTA RICA, Carpintera, *C. II. Lankester* 512, September 4, 1923. Flowers dull maroon. 5500 feet altitude. (TYPE in Herb. Ames No. 27217.)

Illustrations of Central American Species of *Pleurothallis*

Pleurothallis abjecta Ames Sched. Orch. 2 (1923) 17.

Plate 5: 1, lateral sepals $\times 5$. 2, petal $\times 6$. 3, dorsal sepal $\times 5$. 4, labellum from the side $\times 7$. 5, labellum from above $\times 7$. 6, column $\times 6$.

Pleurothallis amethystina Ames Sched. Orch. 4 (1923) 14.

Plate 13: 1, labellum with lateral lobes in natural position $\times 5\frac{3}{5}$. 2, labellum with lateral lobes spread out $\times 5\frac{3}{5}$. 3, column $\times 5$. 4, flower $\times 2\frac{1}{2}$. 5, lateral sepals $\times 2\frac{1}{2}$. 6, petal $\times 3$.

Pleurothallis arietina Ames Sched. Orch. 4 (1923) 16.

Plate 16: 1, labellum with the basal lobes spread out $\times 8$. 2, labellum from above, basal lobes in natural position $\times 8$. 3, column $\times 5\frac{3}{5}$. 4, petal $\times 2\frac{3}{5}$. 5, lateral sepals $\times 2\frac{3}{5}$. 6, dorsal sepal $\times 2\frac{3}{5}$.

Pleurothallis Brighamii S. Wats. in Proc. Am. Acad. 23 (1888) 285.

Plate 7: 1, column $\times 5$. 2, labellum $\times 8$. 3, lateral sepals $\times 2$. 4, petal $\times 4$.

Pleurothallis cachensis Ames Sched. Orch. 4 (1923) 17.

Plate 8: 1, labellum from the side $\times 8$. 2, petal $\times 8$. 3, lateral sepals $\times 3$. 4, labellum $\times 8$. 5, column $\times 6$.

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Pleurothallis canae Ames Sched. Orch. 2 (1923) 18.

Plate 13: 1, petal $\times 4$. 2, labellum with the lateral lobes spread out $\times 5\frac{1}{2}$. 3, labellum with the lateral lobes in natural position $\times 5\frac{1}{2}$. 4, column $\times 5\frac{1}{3}$. 5, lateral sepals $\times 2\frac{1}{2}$.

Pleurothallis cedralensis Ames Sched. Orch. 4 (1923)

18.

Plate 6: 1, column $\times 5$. 2, labellum from the side $\times 5$. 3, petal $\times 3$. 4, dorsal sepal $\times 3$. 5, labellum from above $\times 5$. 6, lateral sepals $\times 3$.



Pleurothallis cerea Ames Sched. Orch. 4 (1923) 19.

Plate 8: habit reduced $\frac{1}{2}$. 1, petal $\times 3$. 2, lateral sepals $\times 3$. 3, dorsal sepal $\times 3$. 4, flower $\times 2$. 5, labellum and column $\times 5\frac{3}{5}$.

Fig. 4: drawn from alcoholic material.

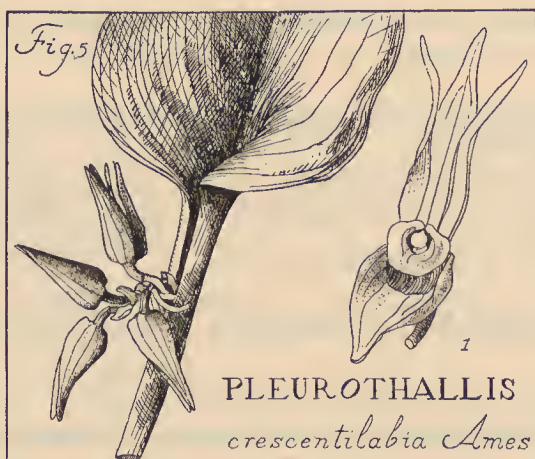
Pleurothallis costaricensis Rolfe in Kew Bull. (1917) 80.

Plate 14: 1, labellum $\times 10$. 2, column with petal $\times 6\frac{1}{2}$. 3, dorsal sepal $\times 3\frac{1}{2}$. 4, lateral sepals $\times 3\frac{1}{2}$.

Pleurothallis crescentilabia Ames Sched. Orch. 4 (1923) 20.

Plate 10: 1, dorsal sepal $\times 2$. 2, lateral sepals $\times 2$. 3, petal $\times 2$. 4, labellum $\times 5$. 5, labellum from the side $\times 4$. 6, column $\times 4$.

Fig. 5: drawn from alcoholic material.



Pleurothallis cucullata Ames Sched. Orch. 3 (1923) 5.

Plate 17: 1, labellum $\times 10$. 2, flower $\times 2^{5/7}$. 3, column $\times 8$.

Pleurothallis dentipetala Rolfe ex Ames Sched. Orch. 3 (1923) 7.

Plate 11: 1, flower $\times 4$. 2, labellum and column $\times 5$. 3, labellum outspread $\times 7$. 4, petal $\times 4$.

Pleurothallis diuturna Schltr. in Fedde Reprt. Beihefte 17 (1922) 19.

Plate 19: 1, labellum $\times 4$. 2, dorsal sepal $\times 2\frac{1}{2}$. 3, labellum with column, sepal and petal $\times 2$.

Pleurothallis divexa Ames Sched. Orch. 7 (1924) 20.

Plate 5: 1, flower $\times 2$. 2, petal $\times 5$. 3, labellum $\times 12$.

Pleurothallis geminicaulina Ames Sched. Orch. 6 (1923) 59.

Plate 14: 1, lateral sepals $\times$ 2. 2, dorsal sepal $\times$ $2\frac{1}{2}$. 3, petal $\times$ $2\frac{1}{2}$. 4, column $\times$ $5\frac{3}{4}$. 5, labellum $\times$ 8.

Pleurothallis glandulosa Ames Sched. Orch. 6 (1923) 60.

Plate 6: 1, dorsal sepal $\times$ 2. 2, labellum $\times$ 6. 3, column $\times$ 6. 4, petal $\times$ 4. 5, lateral sepals $\times$ 3.

Pleurothallis glomerata Ames Sched. Orch. 4 (1923) 21.

Plate 10: habit reduced $\frac{1}{2}$. 1, dorsal sepal $\times$ 3. 2, lateral sepals $\times$ 3. 3, petal $\times$ 3. 4, column (after pollination) $\times$ 9. 5, column and labellum $\times$ 7. 6, labellum $\times$ 8.

Pleurothallis gnomonifera Ames Sched. Orch. 6 (1923) 60.

Plate 7: 1, column $\times$ 10. 2, petal $\times$ 13. 3, labellum $\times$ 10. 4, lateral sepals $\times$ 5. 5, flower $\times$ 6. 6, dorsal sepal $\times$ 6.

Pleurothallis hastata Ames Orch. 2 (1908) 268, *fig.*

Plate 5: 1, column $\times$ 7. 2, labellum $\times$ 6. 3, lateral sepals $\times$ 3. 4, labellum from the side $\times$ 6. 5, petal $\times$ 6. 6, dorsal sepal $\times$ 3.

Pleurothallis hondurensis Ames Sched. Orch. 7 (1924) 20.

Plate 15: 1, column and petal $\times$ 7. 2, anther with pollinia *in situ* much enlarged. 3, pollinia much enlarged. 4, labellum outspread $\times$ 6. 5, lateral sepals $\times$ 3. 6, petal $\times$ 7. 7, flower $\times$ 3.

Pleurothallis jocolensis Ames Sched. Orch. 2 (1923) 19.

Plate 6: 1, column $\times$ 11. 2, labellum $\times$ 10. 3, dorsal sepal $\times$ 4. 4, petal $\times$ 5. 5, lateral sepals $\times$ $3\frac{3}{4}$.

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Pleurothallis Johnsonii Ames Sched. Orch. 2 (1923)
21.

Plate 11: 1, labellum outspread $\times 4$. 2, petal $\times 2\frac{2}{3}$.
3, lateral sepals $\times 1\frac{1}{2}$.

Pleurothallis monstrabilis Ames Sched. Orch. 6
(1923) 63.

Plate 7: 1, labellum from the side $\times 8$. 2, column $\times 7$.
3, petal $\times 8$. 4, labellum $\times 8$.

Pleurothallis Nelsonii Ames Sched. Orch. 4 (1923) 22.

Plate 16: 1, lateral sepals $\times 2\frac{2}{3}$. 2, labellum with basal
lobes spread out $\times 8$. 3, labellum with basal lobes in
natural position $\times 8$. 4, column $\times 5\frac{3}{8}$. 5, petal $\times 2\frac{3}{8}$.
6, dorsal sepal $\times 2\frac{3}{8}$.

Pleurothallis palliolata Ames in Proc. Biol. Soc.
Wash. 35 (1922) 86.

Plate 9: 1, labellum $\times 3\frac{1}{2}$. 2, petal $\times 4$.

Pleurothallis peperomioides Ames Sched. Orch. 6
(1923) 64.

Plate 4: 1, flower (one half removed) $\times 4$. 2, labellum
 $\times 5$.

Pleurothallis peraltensis Ames Sched. Orch. 6 (1923)
65.

Plate 11: 1, labellum $\times 8$. 2, petal $\times 6$. 3, lateral
sepals $\times 4$. 4, column $\times 8$.

Pleurothallis peregrina Ames Sched. Orch. 6 (1923)
67.

Plate 18: 1, petal $\times 5$. 2, column and labellum $\times 3$.
3, labellum $\times 4\frac{1}{2}$. 4, flower $\times 2$.

Pleurothallis pergrata Ames Sched. Orch. 4 (1923)
24.

Plate 6: 1, petal $\times 3$. 2, column $\times 8$. 3, lateral
sepals $\times 2$. 4, dorsal sepal $\times 2$. 5, labellum $\times 5$.

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Pleurothallis periodica Ames Sched. Orch. 7 (1924)
21.

Plate 4: 1, labellum $\times$ 6. 2, column and petal $\times$ 6.
3, flower $\times$ 3.

Pleurothallis poasensis Ames Sched. Orch. 1 (1922)
10.

Plate 12: 1, petal $\times$ 5. 2, column $\times$ 8. 3, labellum
outspread $\times$ 6. 4, dorsal sepal $\times$ 3. 5, lateral sepals $\times$ 2½.

Pleurothallis pompalis Ames Sched. Orch. 7 (1924)
23.

Plate 4: 1, flower $\times$ 2. 2, labellum $\times$ 5. 3, labellum
from above $\times$ 5. 4, column and petal $\times$ 5.

Pleurothallis praegrandis Ames Sched. Orch. 5
(1923) 17.

Plate 17: plant $\frac{1}{3}$ natural size. 1, column and labellum
 $\times$ 10. 2, petal $\times$ 6½. 3, lateral sepals $\times$ 6½. 4, dorsal
sepal $\times$ 6½. 5, labellum outspread $\times$ 10.

Pleurothallis propinqua Ames Sched. Orch. 6 (1923)
68.

Plate 7: 1, column (after pollination) $\times$ 9. 2, flower
 $\times$ 3. 3, labellum $\times$ 6.

Pleurothallis Rowleei Ames Sched. Orch. 1 (1922) 11.

Plate 18: 1, petal $\times$ 3. 2, column and labellum $\times$ 5.
3, labellum outspread $\times$ 5. 4, flower $\times$ 2.

Pleurothallis saccata Ames Sched. Orch. 4 (1923) 25.

Plate 17: 1, lateral sepals $\times$ 3. 2, petal $\times$ 5½. 3,
dorsal sepal $\times$ 3. 4, labellum $\times$ 3. 5, labellum from the
side $\times$ 3.

Pleurothallis samacensis Ames Sched. Orch. 2 (1923)
22.

Plate 5: 1, flower $\times$ 4. 2, labellum $\times$ 8. 3, column $\times$ 8.

Pleurothallis Sanchoi Ames Sched. Orch. 4 (1923) 26.

Plate 12: 1, column $\times$ 5. 2, lateral sepals $\times$ 3. 3, petal $\times$ 5. 4, dorsal sepal $\times$ 3. 5, labellum $\times$ 8. 6, leaf from *Lankester* 482, about natural size.

Pleurothallis stenostachya Reichb. f. var. **Lankesteri** (Rolfe) Ames var. nov.

Pleurothallis Lankesteri Rolfe in Kew Bull. (1914) 210.

The variety differs from the species in having a deep crimson labellum. From available evidence it would seem that this variety is confined to Costa Rica.

Plate 15: 1, flower $\times$ 11. 2, petal $\times$ 13. 3, labellum $\times$ 16. 4, lateral sepals $\times$ $9\frac{3}{4}$.

Pleurothallis trachychlamys Schltr. in Fedde Repert. Beihefte 17 (1922) 23.

Plate 19: 1, flower (one half removed) $\times$ $5\frac{3}{4}$. 2, labellum $\times$ $10\frac{3}{4}$. 3, column $\times$ $7\frac{1}{2}$.

Pleurothallis vinacea Ames Sched. Orch. 6 (1923) 69.

Plate 13: 1, labellum with the lateral lobes in natural position $\times$ $5\frac{3}{4}$. 2, labellum outspread $\times$ $5\frac{3}{4}$. 3, lateral sepals $\times$ $2\frac{1}{2}$. 4, column $\times$ $5\frac{3}{4}$. 5, petal $\times$ 3. 6, dorsal sepal $\times$ $2\frac{1}{2}$.

Pleurothallis Williamsii Ames Orch. 7 (1922) 120.

Plate 15: 1, flower $\times$ $5\frac{3}{4}$. 2, labellum outspread $\times$ 9. 3, petal $\times$ 8.

Polystachya Powellii Ames sp. nov. Caules plus minusve elongati, vaginis foliorum omnino obtecti. Folia ligulata, utrinque angustata, apice obtuse bilobulata. Pedunculus folia excedens, vaginis tubulatis obtectus. Racemi plures, breves, secus rachin communem dissiti, paniculam angustam laxam formantes. Sepala lateralibus mentum formantia, ovata, acuta, concaviuscula. Sepalum dorsale oblongum, acutum. Petala lineari-spathulata, uninervia. Labellum c basi cuneata dilatatum, supra medium trilobatum; lobis lateralibus obtusis; lobo medio abrupte in apicem

acuminatum valde deflexum contracto. Discus prope basim callo permagno ceroso ornatus. Columna abbreviata.

Roots coarsely fibrous. Stems up to 8 cm. long, slender, entirely concealed by tubular bracts and the sheaths of the leaves. Leaves 10–14.5 cm. long, up to 2.2 cm. wide, usually three, approximate, crowded near the summit of the stem, ligulate, gradually narrowed toward the obtuse bilobulate apex, coriaceous, ascending. Peduncle up to 18 cm. long, clothed with elongated ancipitous closely appressed sheathing bracts, loosely paniculate, with the divisions of the panicle 2.5–3.5 cm. long. Flowers olive green with purple markings. Pedicel with the ovary about 3 mm. long. Lateral sepals about 4 mm. long, forming a blunt mentum which is 2 mm. long, broadly ovate, acute, reticulate-nerved, with the middle nerve more or less prominent on the outer surface. Dorsal sepal 4 mm. long, narrower than the laterals, oblong, acute. Petals 3 mm. long, narrowly spatulate, emarginate at the apex or unequally bidentate. Labellum 3.5 mm. long, about 3 mm. wide across the lateral lobes, dilated to about the middle from a cuneate base, trilobed in front, with the lateral lobes much smaller than the terminal lobe; lateral lobes obtuse; middle lobe rounded, abruptly contracted into an acuminate tip. Disc with a large conical waxy callus at the base. Column about 3 mm. long.

Polystachya Powellii, in habit, resembles *P. luteola* Hook., but is quite different from it in the structure of the labellum. It differs from *P. lineata* Reichb. f. in having smaller flowers and in having the middle lobe of the labellum subequal to the lateral lobes and abruptly contracted into a slenderly acuminate tip.

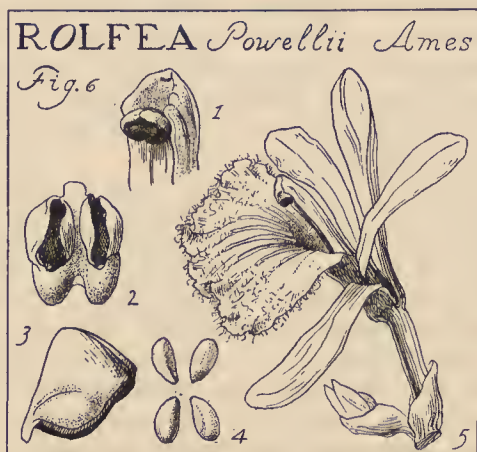
PANAMA, Province of Chiriqui, west side of Caldera River, in gulch opposite Lino, C. W. Powell 343. Flowering at Balboa under cultivation in September 1923. Lip very fuzzy, as if it were frosted. 4000 feet altitude. (TYPE in Herb. Ames No. 27177.)

***Rolfea Powellii* Ames sp. nov.** Herba terrestris, elata, foliosa. Radices valde fibratae, amplae. Caules erecti, graciles. Folia papyracea, prominenter nervosa, in petiolos

vaginantes contracta, patentia, anguste lanceolato-elliptica, oblique ascendentia, acuminata, acutissima. Inflorescentiae laterales vel terminales, pauciflorae. Bracteae inflorescentiae ovatae, acutae, nervosae. Pedicellus cum ovario gracilis, elongatus. Sepala lateralia spathulata, subacuta, extus nervo medio prominenti. Sepalum dorsale spathulatum, obtusum, anguste unguiculatum. Petala oblongospathulata, obtusa, margine aliquando obscure crenulata, leviter curvata. Labellum basi cum columna per medium cohaerens, abrupte dilatatum, late flabelliforme, antice trilobatum; lobis lateralibus obtusis, rotundatis; lobo medio profunde bilobulato. Discus praecipue prope apicem et basim labelli copiose pilosus, multinervius, supra medium quinquelamellatus. Columna gracilis, intus prope basim pilosa. Clinandrium valde cucullatum. Anthera postice valde carnosa et antice breviter rostrata. Stigma ut in *Arethusa* profunde excavatum. Capsula longe cylindracea, columna persistenti coronata.

Terrestrial herb. Stems leafy, about 30 cm. tall, 2-3 mm. in diameter near the base, arising from a mass of coarse fibrous spreading roots. Leaves alternate, 10-32 cm. long, up to 5 cm. wide, plicate, prominently many-nerved, narrowly lanceolate-elliptic, chartaceous when dry, long acuminate, acute, contracted at base into slender petioles which sheath the slender stem. Inflorescences lateral and terminal, racemose, 3.5-5 cm. long, sometimes branched, rachis smooth. Bracts of the raceme 5-6 mm. long, ovate, acute, prominently nerved. Flowers about eight, opening in succession, of brief duration, creamy white. Lateral sepals hardly 1.5 cm. long, 3 mm. wide above the middle, asymmetrically spatulate, subacute or obtuse, membranaceous, middle nerve prominent on the outer surface. Dorsal sepal 1.5 cm. long, 3 mm. wide, spatulate, obtuse, subtruncate at the apex. Petals 1.5 cm. long, about 3 mm. wide near the rounded tip, spatulate, somewhat curved, margin sometimes obscurely crenulate above the middle. Labellum embracing the column, 1.7 cm. long, 1.5-1.6 cm. wide at the middle when spread out, abruptly dilated above the base, rotundate-flabelliform, 3-lobed in front, with the lateral lobes

rounded and the middle lobe deeply bilobulate. Disc pilose, especially near the apex and at the base, with five lamellae, of which the middle one extends almost to the apex of the middle lobe. Column about 1.2 cm. long, slender, for about one-third of its length adnate to the labellum, densely pilose on the ventral surface near the base, hardly dilated above. Clinandrium strongly eucullate, entire. Anther fleshy posteriorly, produced at the apex into a rostrate appendage between the cells. Pollinia four, ovate, strongly flattened, becoming pulveraceous. Stigma deeply concave, declinate, similar to the stigma of *Arethusa bulbosa*. Capsule terete, about 3 cm. long, with the column persistent at its summit.



Mr. Powell reports that the flowers fall very shortly after expanding and that one must be alert to secure them in good condition.

Readily distinguished from *Rolfea elata* Zahlbr. by its smaller flowers and 5-lamellate labellum. [Fig. 6, fl. $\times 2$.]

PANAMA, "Juan Diaz," near Panama City, C. W. Powell 325, August–September, 1923. Found in damp places in dense shade. (TYPE in Herb. Ames No. 27036.)

***Sobralia corazoi* Lankester & Ames sp. nov.** Caules rigidi, bi- vel tri-foliati. Folia valde coriacea, anguste elliptica, acuminata. Vaginae foliorum arcte appressae, ob-

TROPICAL AMERICAN ORCHIDS

scure verrucosae, inter se distantes. Flores in genere minores, e bracteis imbricantibus orientes. Sepala lateralialia elliptico-lanceolata, acuta, subcoriacea, purpureo-tincta, apice reflexa. Sepalum dorsale quam sepala lateralialia angustius, oblongum, acutum. Petala albida, oblonga, acuta, membranacea, reticulato-nervosa. Labellum albidum, antice profunde retusum, margine valde crenulato-denticulatum, circumcinctu late ovatum, obtusum; discus glaber. Columna arcuata, antice conspicue canaliculata.

Stems about 4 dm. long, with closely appressed tubular lightly verrucose sheaths. Leaves distantly alternate, two to three, 5-16 cm. long, up to 6 cm. wide, coriaceous, sessile on a clasping vaginate base, elliptic or elliptic-lanceolate, acuminate, acute, obliquely ascending, the uppermost one often much reduced and closely subtending the inflorescence. Flowers arising from an abbreviated cluster of closely imbricating bracts. Lateral sepals tinged with purple, hardly 2 cm. long, 8 mm. wide, fleshy, elliptic-lanceolate, acute, with the apex sharply reflexed, somewhat earinate on the dorsal surface. Dorsal sepal narrower than the laterals, 2.2 cm. long, about 6 mm. wide, oblong, acute. Petals white, membranaceous, 1.7 cm. long, 4.5 mm. wide, oblong, acute, reticulate-nerved. Labellum about 1.3 cm. long, 1.6 cm. wide near the base, embracing the column, ovate in outline, deeply retuse at the apex, margin crenulate-dentate with blunt coarse teeth. Disc smooth. Column about 1.2 cm. long, arching, dilated upward, widely sulcate in front.

COSTA RICA, Peralta, *C. II. Lankester* 538. Sepals faintly purplish, semi-hyaline; petals and labellum white. 4000 feet altitude. (TYPE in Herb. Ames No. 27750.)

Triphora cubensis (*Reichb. f.*) *Ames comb. nov.*

Pogonia cubensis *Reichb. f.* in *Nederl. Kruidk. Arch.* 4 (1858) 322 (by typographical error as *rubensis*).

This rare and sparsely distributed species is now known to be a native of Florida.

Vanilla fragrans (*Salisb.*) *Ames comb. nov.*

Myrobroma fragrans *Salisb.* *Parad. Lond.* (1807) t. 82.

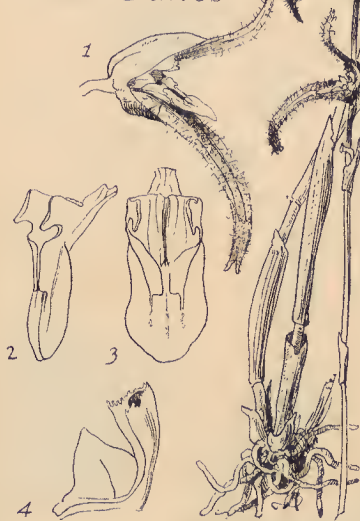
Vanilla planifolia *Andrews* *Bot. Repos.* 8 (1808) t. 538.

R. A. Rolfe, in his revision of the genus *Vanilla* (in *Journ. Linn. Soc.* 32 (1896) 440), directed attention to the fact that the specimens figured by Salisbury in 1807 and by Andrews in 1808 were taken from the same plant. It has been customary to use, for the vanilla of commerce, the name proposed by Andrews, but priority of publication belongs to Salisbury, and the specific name *fragrans* should be adopted.

P peperomoides Ames



P pompalis Ames



P periodica Ames



PLEUROTHALLIS

Pl. 4

P. hastata Ames



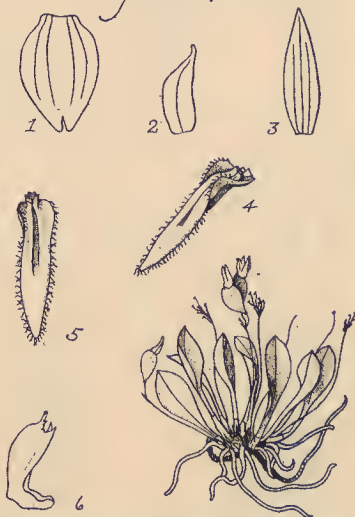
P. divexa Ames



P. samiacensis Ames



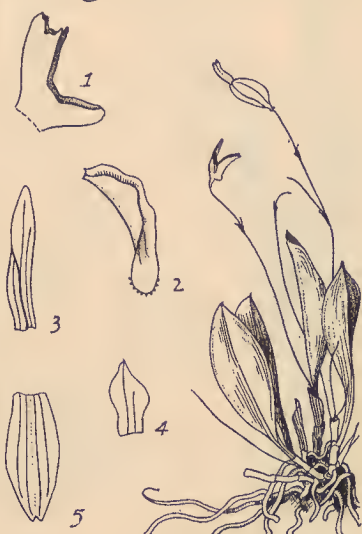
P. abjecta, Ames



P. cedralensis Ames



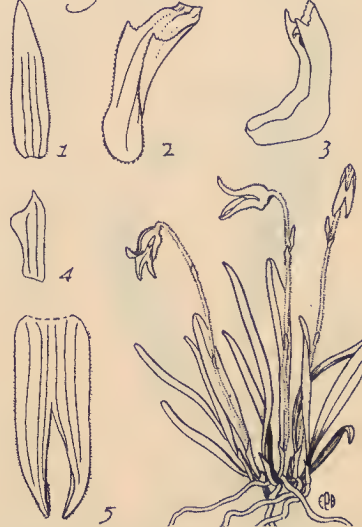
P. jolocensis Ames



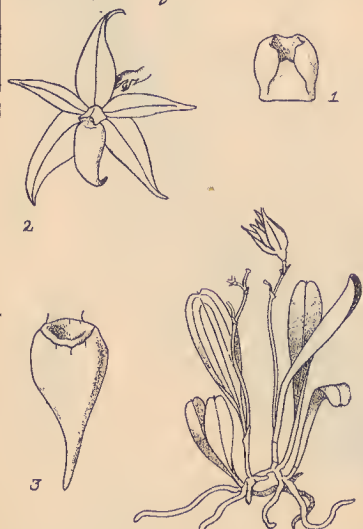
P. pergrata Ames



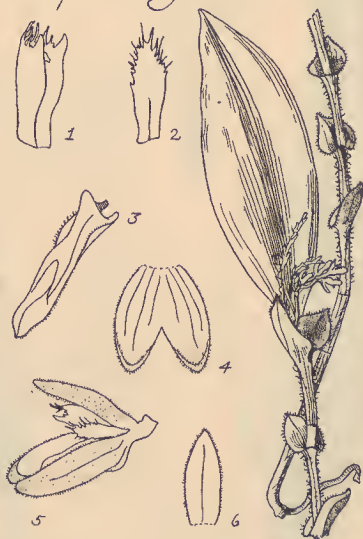
P. glandulosa Ames



P. propinqua Ames



P. gnomonifera Ames



P. monstrabilis Ames



P. Brighamii S Wats.



PLEUROTHALLIS

Pl. 7



PLEUROTHALLIS

palliolata
Ames



P. glomerata, Ames



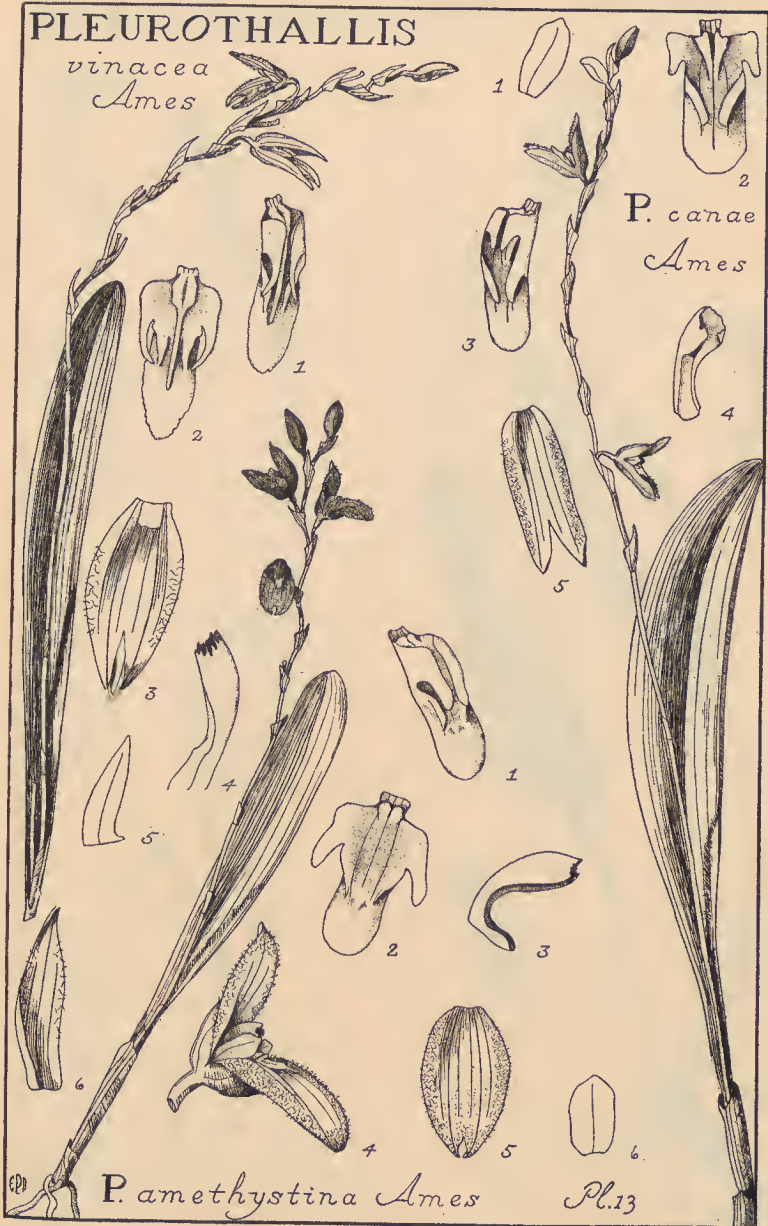
P. crescentilabia
Ames





PLEUROTHALLIS

vinacea
Ames



P. canae
Ames

P. amethystina Ames

Pl. 13

PLEUROTHALLIS *geminicaulina* Ames



PLEUROTHALLIS

Pl. 15

Williamsii Ames



P. stenostachya

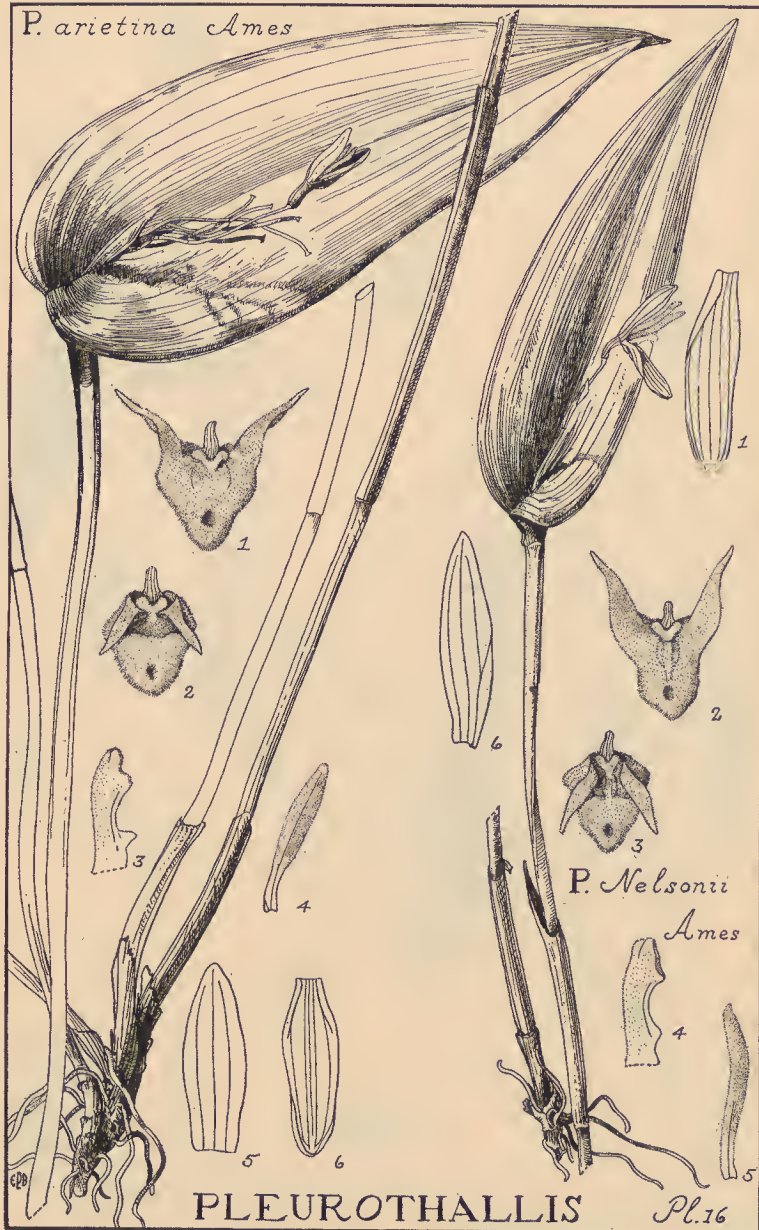
Reichb.f.
var.



P. hondurensis Ames



P. arietina Ames



PLEUROTHALLIS

Pl. 16



PLEUROTHALLIS *Pl. 18*

Rowleei
Ames



P peregrina Ames

PLEUROTHALLIS *trachychlamys*
Schlechter



P. Diuturna Schlechter Pl. 19

EPIDENDRUM *linifolium* Ames



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